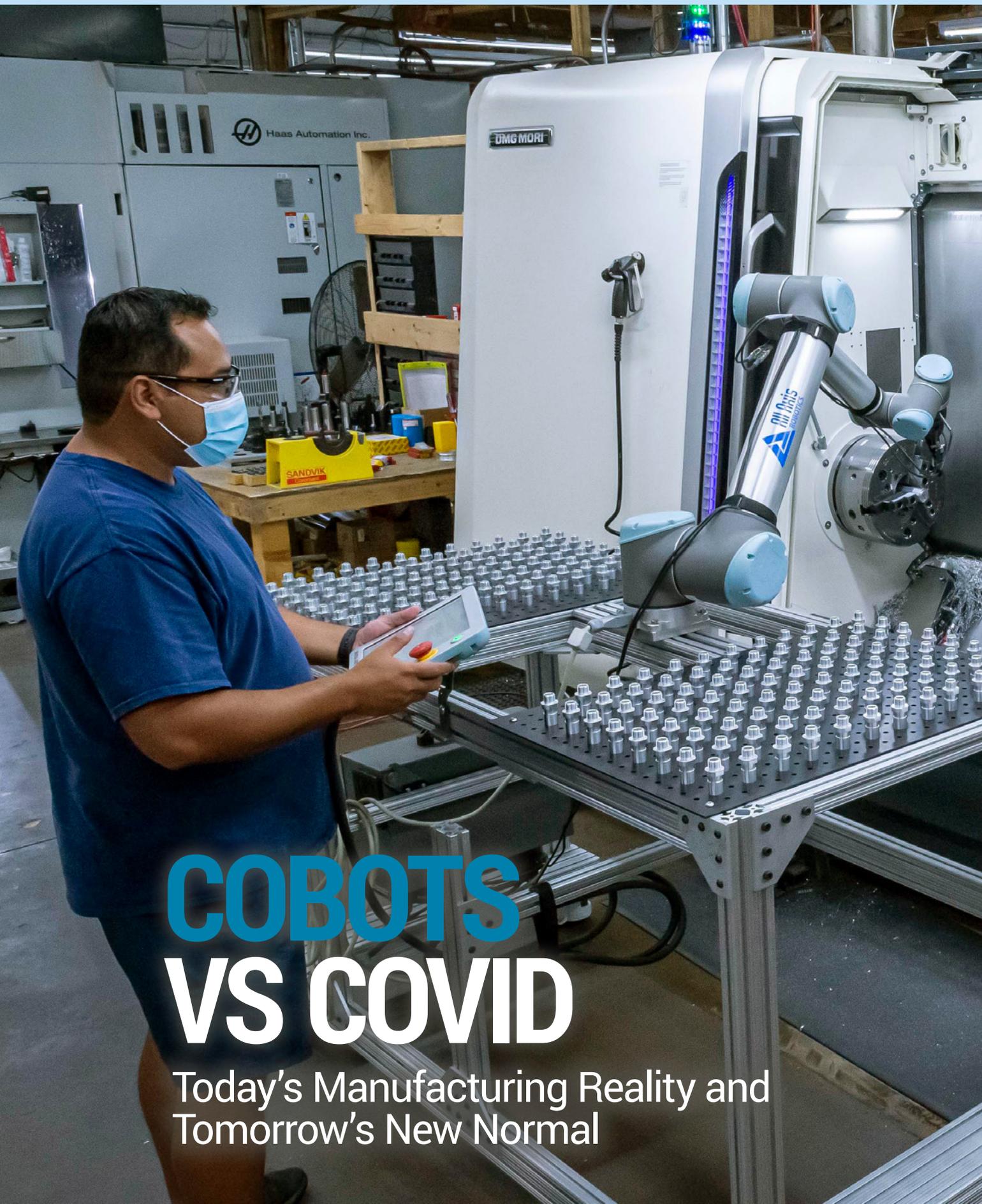




UNIVERSAL ROBOTS



COBOTS VS COVID

Today's Manufacturing Reality and
Tomorrow's New Normal

Manufacturers are leveraging collaborative robots (cobots) to create safe zones for workers returning to production lines.

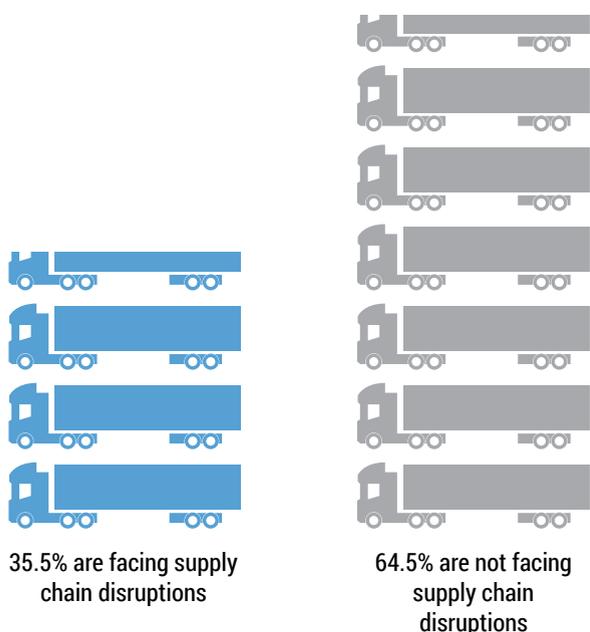
Cover: Dallas-based All Axis Manufacturing employs eight UR10 collaborative robots in its machine shop, enabling fewer socially distant employees per shift. Owner Gary Kuzmin says this has resulted in better productivity and lower operating costs.

As countries around the world get back to “normal” operations following the COVID-19 shutdowns in early 2020, leaders struggle to create the new normal, where people feel safe and employees can return to work safely and with confidence. Thankfully, manufacturing companies have help when it comes to creating new operational plans. Organizations such as the National Association of Manufacturers (NAM) and analyst firm McKinsey & Company are providing guidance

both big – such as requesting governments to update digital infrastructure and encouraging reshoring of manufacturing operations – and small, such as leveraging automation to “drive productivity at a distance.”

Businesses can also follow the lead of essential companies that had to learn on the fly as they continued to manufacture critically needed equipment, materials, and foodstuffs. Many of these companies have leveraged automation, including collaborative robots (cobots for short), to maintain and expand critical production while protecting employees – not just from COVID-19 but also from jobs that are dull, dirty, difficult, and occasionally dangerous.

Manufacturer Supply Chains



Manufacturing the ‘New Normal’

In the second week of March, just days after the first U.S. state issued a stay-at-home order, nearly 80% of U.S. manufacturers expected to take a financial hit from the pandemic, while more than half anticipated that they would need to change their basic operations, according to NAM.

Take electronics manufacturing, for example. It takes hundreds of workers to make a single

NAM Coronavirus Outbreak Special Survey
February/March 2020.



In the past, it took five people at DCL Logistics to manage a conventional manual picking process: one to pick the order, one to bring it to the line, one to verify it, one to kit it, and the last person to pack and ship it. "The robotic system can do within two hours what a team of five people would do in an entire day," states Brian Tu, Chief Revenue Officer at DCL Logistics.

cell phone. Traditionally, workers assembling electronic devices stood at 2-foot intervals along the production line. Obviously, that spacing will have to be significantly increased to maintain 6-foot safe zones around each mask-wearing employee. Interspersing cobots among the assembly workers allows manufacturers to create the necessary safe zones.

And it's not just consumer electronics that faces the challenge of creating safe spaces

for workers along crowded production lines. Carrier Global, a manufacturer of heating and air-conditioning systems, has implemented

social distancing rules on its assembly lines. Technicians who once worked shoulder-to-shoulder are now spread out along a conveyor belt. The resulting gaps may soon be filled with new machines.

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"Where you have people spaced out 3 feet and you want to get them spaced out 6 feet, probably the spacing in between you're going to see, I think, a trend towards robotics overall," David Gitlin, Carrier's chief executive, told CNBC during a recent interview.

DCL Logistics, a third-party logistics (3PL) fulfillment center based in Fremont, CA, saw a 30 percent increase in business over a 60-day period as Amazon started prioritizing essential

products, causing many vendors to turn to 3PLs for direct-to-consumer fulfillment. "Usually we would hire temporary workers to come in and help

us with the uptick in orders, but we wanted to keep our existing employees safe and avoid having them come into contact with other people than the small group they work with every day, so this wasn't an option," says Brian Tu, Chief Revenue Officer at DCL Logistics.

"Fortunately, we had just installed our second collaborative robot, integrating it into a conveyor system, so with our new automated cells and some reorganizing of existing staff resources, we were able to handle the increase in orders without changing our SLAs (service level agreements)," he says, adding that this has been a major differentiator for his company during the pandemic. "I think we were one of the only fulfillment centers that didn't change our SLAs. Leveraging robotics even more in the future has definitely become part of our business continuity plan."

Analysts expect that manufacturers looking to automated solutions to help keep workers safe will become the

trend, not the exception. "Since the problem of 'distance' can't be solved without the adoption of technology, we're going to see many years' worth of innovation in the next 18 months. Many of these solutions will bring greater efficiency, lower costs, and less waste, enabling them to outlast the pandemic and pay for themselves quickly," writes Forbes' Anna-Katrina Shedletsky.

Manufacturing 'Safe Shifts' with Cobots

RCM Industries, a Midwest manufacturer of die casting parts for the medical, military, and automotive industries, was deemed an essential operation during Illinois' statewide stay-at-home

order. As a result, management needed to find a way to keep producing CNC-machined parts while keeping workers safe.

"All our four plants have been substantially impacted by the pandemic — our operations are down 50 to 80 percent right now," explains RCM's sales and marketing manager Mike Higgins.

"We're basically running a skeleton crew on-site at our plants."

RCM recently installed two collaborative robots in a pair of identical machining cells to reduce

manufacturing costs and to keep a valued customer from moving production offshore. When the pandemic arrived, RCM was able to

keep critical machining operations going with the minimum number of operators on hand.

"In times like these, our automated cells have really been beneficial," says Higgins. "The crew that we kept on staff had a broader skill set and were not familiar with the direct operation of the collaborative robots, but since the day-to-day operation of the cobots is fairly easy to learn, handle, and monitor, this has not been an issue." By implementing automation, RCM Industries was able to compete with lower-wage countries when bidding on orders for local customers.

"Being close to our customers is definitely more important now than ever. As a result, we have not had any delays in getting our products out.

"All our four plants have been substantially impacted by the pandemic — our operations are down 50 to 80% right now," explains RCM's sales and marketing manager Mike Higgins.

As our customers start making new decisions on future orders, I believe that choosing local suppliers is going to matter even more," says Higgins.

He expects that RCM will have to leverage automation to restructure other work spaces, shifts, and even lunch times to keep workers safe. RCM isn't alone. For example, California's RSS Manufacturing has leveraged automation to bring manufacturing back to the U.S. and shorten its supply chains, a change that will keep workers both safer and happier as they move to more engaging positions inside the company.

In Dallas, Texas, All Axis Manufacturing added more machine tending cobots after the pandemic hit and created a weekend shift to spread out their employees.

Machine shop owner Gary Kuzmin says, "Now we have just a few people in the shop, and the cobots' better productivity results in lower operating costs and more manufacturing hours available. It's the best thing I ever did."

He continued, "Cobots allow us to keep employees socially distanced in a way they feel comfortable. We now have more robots working and minimal crew taking care of non-robot actions. This shift in operations was all driven by COVID and with the help of the cobots, it's working out very well for us."



Cobots offer flexibility to be moved from one task to another, as shown in this rolling pedestal stand created by Texas-based All Axis Manufacturing.

All Axis now has eight UR10s deployed in machine tending applications with three shifts running 24/7. The first shift is staffed with the technical team that sets up and maintains the robots; second shift is staffed more sparsely with 2-3 operators running six machines; and third shift is now completely lights out.

Cobots: The Pandemic Solution

Even before a novel coronavirus upended global manufacturing, industry was concerned about worker safety, long supply chains, and staying competitive through productivity gains. And the pandemic has clearly shown that physical and economic health go hand in hand. One possible silver lining of the COVID-19 crisis is that worker safety will come into even sharper focus.

"Our collaborative robots' built-in safety functions enable them to work right alongside workers, providing an effective social distancing option in the work environment," explains Joe Campbell, senior manager, strategic marketing

and applications development at Universal Robots. “Incremental automation enabled by our cobots maximizes people value and makes industrial automation accessible to companies of all sizes. Even before COVID-19, our cobots freed people from their 4D jobs – dull, dirty, dangerous, and/or difficult – and upgraded their roles in ways in which they excel and have higher degrees of fulfilment.

“Cobots offer a way to keep workers safe through social distancing, countries safe through shortened supply chains of critical materials, and companies safe through higher productivity and greater production flexibility,” concludes Campbell. “Working together has always made us stronger. Universal Robots is proud to be a small part of helping make the ‘new normal’ a little better for us all.” 

Ask UR experts how cobots can put automation within reach.

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For the machine tending application, RCM Industries typically ran three shifts with three operators running machines on each shift. After implementing cobots, the company was able to reduce that to one person managing all operations in each shift, essentially reducing staffing requirements by six people in that cell.